



Building solid ground for data sharing

A talk with Maria Gripenblad and Mikael Renz of the Swedish Maritime Agency on LL#7¹

Through the FEDeRATED project run several schisms. One of them is the divide between public and private sector. Another one is the divide between science & research on one side, and hands-on getting-the-job-done on the other. Talking about this second schism: the FEDeRATED network of platforms is projected from the top, as a design, but built from the bottom, as a real-life network. And those two perspectives are not always easy to match. But Mikael Renz and Maria Gripenblad do their best to tie theory and practice together in their Living Lab. LL#7 is initiated by the Swedish Maritime Agency (SMA) and aims at building a FEDeRATED platform for at least two API's: AAA and RETIS (see box 1 and 2). Mikael Renz is Activity Coordinator for the SMA, while Maria Gripenblad coordinates the RETIS-project within this FEDeRATED Living Lab.

Starting with the Maritime Single Window

Sweden functions more or less like an island in terms of international supply chains. Because of that, maritime transport is of crucial importance here as a transport modality. Sweden has some 60 main maritime ports, and when one counts all the additional ports tied to specific industries –for example a port that is used by a large paper industry on the shores of Lake Vänern– it counts up to some 200 ports.

The Swedish Maritime Agency (SMA) is the first Swedish administration that deals with ETA's of ships importing and exporting raw materials and products to and from Sweden. The data on the cargo are available to the SMA, but not included in this Living Lab.

LL#7 RETIS starts with these ETA-data on ships travelling to its ports, for example the port of Gothenburg. The ETA's, which are not that precise, are then further refined by the port pilots from the Gothenburg Port Authority, who enter the real time of arrival of a ship on their iPads. Once arrived in Gothenburg harbor, the ships are then piloted up the waterway Göta älf, to continue their journey to their final destination. By way of efficient flow calculations the ATA's in turn result in the estimated passage time of that ship at each bridge and lock in Göta älf.



Maria Gripenblad

¹ Interview by Minne Buwalda





Building solid ground

LL#7 wants to make its data available to other Swedish stakeholders, be it public or private parties. Mikael: “Making data available has to be realized before you can ‘federate’ or share data, and often this is still missing. We have to start with reality, which is still far less advanced than the real time data sharing we ultimately aim at. Many researchers are far ahead of reality. But in order to get all their great ideas work, you first need solid ground to stand on.”

Such solid ground is being built by LL#7, although the project was hit hard by the Covid-pandemic and a consequent lack of materials and resources. The organizing SMA had to prioritize their core business, which hindered developments on the new, EU-legislation based platform for API’s they are building. Mikael: “Notwithstanding these setbacks, we know how we want to do it, and I believe we will be able to have put up the API’s by the end of this project.” Maria adds: “There is a big chance we deliver the API called AAA before the end of the FEDeRATED-project. And hopefully we will be able to do something with the API called RETIS as well. But even when RETIS is not up and running by the end of the project, I expect we can validate an expected semantic model.”

Talking about semantics, Maria continues: “This is not that difficult, because we are not dealing with a lot of different data. We have the ETA time of an IMO-identified ship going to a certain inland port to start with. The data we want to share are in the IMO semantic model. We are using the semantics from the IMO-compendium, and then validate if that works with the FEDeRATED semantics: our FEDeRATED-semantics have to comply with IMO-semantics.” Asking how exactly they plan to make these API’s interoperable with the FEDeRATED network of platforms, in terms of semantics, Mikael says: “We will create these API’s in accordance with the FEDeRATED architecture and semantics. We want to test it through The Living Labs of Kvarken ports, and platform Deplide.



Talking about identity, another functionality of FEDeRATED, Mikael says: ‘You can identify a ship by way of its IMO-number, but you cannot authenticate it based on such data. For authentication you probably need some kind of electronic ID or certificate. With respect to this, LL#7 is now looking into implementing European eIDAS-legislation with respect to authentication.’

Mikael Renz

Box 1: AAA

The name AAA puzzles. When I ask Mikael what is meant by this abbreviation, he says: “It is just a project name, but loosely it means something like ‘times for arrivals and departures’.



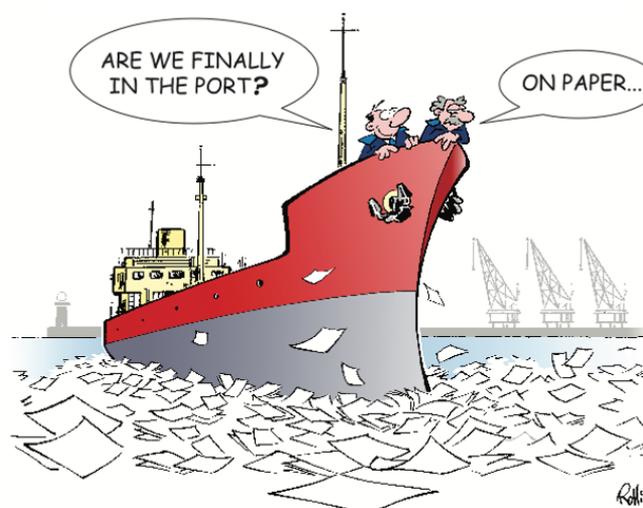


This API deals with ETA data, which are among the most sought-after data in supply chains. And updated or real time ETA's are even more desirable. The API called AAA provides data from the Maritime Single Window, and makes ETA-data available to Swedish maritime port stakeholders. Mikael: "We work with the Maritime Single Window-data and connect those data to some seven or eight Swedish maritime ports." These are ports in the South of Sweden, just like Gothenburg, He continues: "To make AAA FEDeRATED-compliant and show that it works we also want to team up with the LL's of Kvarken Ports, in the North of Sweden. They are working with Deplide, a Swedish FEDeRATED platform for exchange of data that is developed by RISE, Sweden's main research institute. Besides this connection with Kvarken Ports and it's Deplide platform, we also want to connect more directly to other port systems. We already did a proof of concept in this respect, but the system still has to be turned into a more generalized, FEDeRATED and user-friendly API."

Box 2: RETIS

The set-up of the API called Real Time Information Services, or RETIS, is run by Maria. She is new on the job, since January 2022. RETIS uses the system of the SMA-owned pilotage service to update MSW ETA's, and basically aims at traffic management. RETIS provides updated data on ships arrival at bridges and locks when they pass through the river Göta älf, which runs from the port of Gothenburg to Lake Vänern, 93 km upstream. The shipping pilots of the SMA, which guide the maritime ships into the harbor of Gothenburg and then up the river Göta älf, play a crucial role here, because in their piloting system static data are turned into real time data.

Along the journey up the river Göta älf the ETA-times can be refined, and by making these data available to rail and road traffic planning platforms, bridges can be opened and closed in a more synchronized way. Hinterland ports, for example those on the shores of Lake Vänern, where there is a lot of industry, can also take advantage of these updated ETA-data.





Working on stakeholder involvement

Meanwhile, the Swedish Maritime Agency is gaining an audience amongst Swedish ports, who of course are interested in a system for updated ETA's. Yet, these stakeholders have to allocate resources, including manpower, to work together with the SMA in making this data-exchange work by way of the AAA API.

Concerning the API RETIS, the SMA is talking to other stakeholders, for example the owners of the roads and railway lines that cross the Göta älf by way of bridges. Now the opening and closing of bridges is still not synchronized or coordinated by data exchange, resulting in loss of time and money. Mikael on RETIS: "This project is more appealing but also more difficult, because there is more research involved and it needs cooperation with many other organizations." Mikael is mainly talking about stakeholders like the city of Gothenburg and the Swedish Transport Administration (STA), who own the railway and road bridges crossing Göta älf. According to Maria, these stakeholders are interested but, for the time being, have their priorities elsewhere.

LL#7 runs into the problem of separate administrative realities here, which are often quite hard to bring together. When one organization has allocated resources, the other organization may have run out of resources. The Covid-pandemic and the consequential focus on core business by separate administrations, did not help either.

So, the first part of the FEDeRATED-journey is successfully realized: the refined ETA-data can be made available. And now it is time to work on stakeholder involvement and create the final API's, in order to actually share those data and create the added value the FEDeRATED project is aiming at. That is where LL#7's main focus will be the coming year.

